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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,853	12/22/2003	Dirk Herke	HOE-792	9107
20028	7590	09/08/2004	EXAMINER	
LAW OFFICE OF BARRY R LIPSITZ 755 MAIN STREET MONROE, CT 06468			MCCLLOUD, RENATA D	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/743,853

Applicant(s)

HERKE, DIRK

Examiner

Renata McCloud

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14, 16, 20, 23 and 24 is/are rejected.
- 7) ☒ Claim(s) 15, 17-19, 21 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/23/2004</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Drawings***

1. The drawings are objected to because the boxes referenced as "MS" need to be labeled descriptively. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "MS". Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in

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compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 23 and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 23 recites the limitation "the inductor", "the capacitor" and "the freewheeling branch". There is insufficient antecedent basis for these limitations in the claim.

6. Claim 24 recites the limitation "the capacitor", "the freewheeling branch", "the inductive load", "the ten-fold cycle time". There is insufficient antecedent basis for these limitations in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-14, 16, and 20 rejected under 35 U.S.C. 102(b) as being anticipated by Hanner (US 4479079).

Claim 1: Control device for DC motors provided with a commutator for feeding their motor windings, said commutator having at least four sliding contacts (Fig. 1: Ba+, Ba-, Bb+, Bb-), said device comprising a modulation stage generating at least one control signal modulated as to pulse width with a clock frequency substantially above the motor speed (Fig. 2: 32, p; Fig. 3) and a control circuit (Fig. 2: 34) controlled by the at least one control signal and having at least one load branch (Fig. 2: Gate A, Gate B) feeding the commutator and being provided with an electronic switch (Fig. 2: 38, 40) controlled by the control signal modulated as to pulse width, wherein the sliding contacts are combined to form at least two control groups (Fig. 2: Gate A, Gate B), that the sliding contacts are combined within each control group to form shunt-fed pairs of sliding contacts (Fig. 1: Ba+, Ba-, Bb+, Bb-) and that each control group has its own load branch (Fig. 2: Gate A, Gate B) associated with it.

Claim 2: Control device as defined in claim 1, wherein each load branch comprises a freewheeling component (Fig. 1: spark quenching freewheeling diode on both sides) and an electronic switch (Fig. 1: SCR A, SCRB) connected in series to the shunt-fed pairs of sliding contacts (Fig. 1: Ba+, Ba-, Bb+, Bb-).

Claim 3: Control device as defined in claim 1, wherein the modulation stage generates a separate control signal modulated as to pulse width for each of the load branches (Fig. 3:A, B).

Claim 4: the at least two control signals have the same period duration (Fig. 3: A,B).

Claim 5: the at least two control signals have an identical pulse width modulation for the load branches (Fig. 2: pulses coming out of 36).

Claim 6: wherein the at least two control signals are phase-locked in relation to one another (Fig. 3: A,B).

Claim 7: wherein the at least two control signals are shifted in phase relative to one another (Col. 4:10-21).

Claim 8: the switch-on time period of one of the load branches and the switch-off time period of the other one of the load branches are predetermined relative to one another and that the time interval between the switch-on time period of the one of the load branches and the switch-on time period of the other one of the load branches varies in accordance with the value of the PWM ratio to be set (Fig. 3: A, B).

Claim 9: a control of the at least two load branches is brought about such that one of the load branches is switched on when the other one of the load branches is switched off (Fig. 3: when A is off, B is on and vice versa).

Claim 10: each of the load branches is switched on only when the respectively other one of the load branches is switched off (Fig. 3: A is on, B is off).

Claim 11: each of the load branches is switched off with a gap in time prior to any switching on of the respectively other one of the load branches (Fig. 3: B is off for a long time before A is on).

Claim 12: a minimum period of time of 0.5 % of the period duration is provided between the switching off of each of the load branches and the switching on of the respectively other one of the load branches (Fig. 3: A, B) .

Claim 13: the switch-on time period of the one load branch and the switch-off time period of the other load branch vary (Fig. 3: A, B).

Claim 14: one of the load branches is switched on only during the switching off or after the switching off of the other one of the load branches (Fig. 3: A,B).

Claim 16: the control circuit has a capacitor (Fig. 1: quenching capacitor) arranged on the supply side of the load branches.

Claim 20: at least two load branches have the same circuitry configuration (Fig. 1: Gate A, Gate B).

Allowable Subject Matter

9. Claims 15,17-19,21 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Claims 23 and 24 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are: Decicco (US 6680596), Dimatteo et al (US 5623177), Middlebrook (US 3875495), Muller (US 4240014), Furukawa (US 6009362), Gakenholz (US 5023532), Yamazaki (US 6479917), Trusock et al (US 4500819), Tanaka et al (US 6388355), Wille et al (US 5602957), Couetoux (US 5311615), Smith (US 3820000), Yamada et al (US 4827897), Barba (US 5914576), Charreton (US 5942864), Lakerdas et al (US 5925999), Arnaud et al (US 5473227), Fulks et al (US 5522653), Kershaw et al (US 6448676), Rice et al (US 5898288), and Schmid et al (US 5552686). Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Renata McCloud
Examiner
Art Unit 2837

RDM

A handwritten signature in black ink, appearing to read 'D. Martin', is positioned above the printed name and title.

DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800